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EXHIBIT B

(Clean form of amended claims, and new claims)

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1. (Amended) A digital imaging device comprising:

a top electrode layer;

a dielectric layer under the top electrode layer;

a sensor layer under the dielectric layer, comprising a photoconductive layer and a plurality of pixels, each pixel comprising a charge-collecting electrode;

a thin film transistor readout matrix connected to the charge-collecting electrodes; and

a variable power supply adapted to provide a range of voltages between the top electrode layer and the readout matrix;

said range of voltages establishing electrical fields in said sensor layer ranging from a minimum electrical field E_C, at which a signal-to-noise ratio of the device is relatively high but the device operates below a saturation point, to a higher electrical field E, at which the signal-to-noise ratio may be lower but is at least 50; and

said variable power supply being set to a selected voltage within said range matching a selected object being imaged with said digital imaging device.

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9. (Amended) A method for providing a broad dynamic range for a digital imaging device and controlling a signal-to-noise behavior of the device to maintain a signal-to-noise ratio of at least a selected level and prevent saturation of the device, said device comprising a top electrode layer; a dielectric layer; a sensor layer comprising a photoconductive layer and a plurality of pixels, each pixel comprising a charge-collecting electrode; a thin film transistor readout matrix connected to the charge-collecting electrodes; and a power supply for supplying a voltage between the top electrode layer and the readout matrix; the method comprising varying the voltage between the top electrode and the readout matrix to provide an acceptable signal-to-noise ratio over a greater range of exposures than provided with a single voltage; said

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step of varying said voltage comprising varying the voltage to establishing electrical fields in said sensor ranging from a minimum electrical field $E_{C.}$ at which the device has a relatively high signal-to-noise ratio but still remains below a saturation point, to a higher electrical field E, at which the device has a signal-to-noise ratio that may be lower but still is at least 50, and said varying further comprising ultimately setting said voltage at a level within said range matching an object being examined with said device.

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15. (New) A method of operating a digital imaging device to image an object in a non-destructive testing process, said digital imaging device comprising a top electrode layer, a sensor layer comprising a photoconductive layer and a plurality of pixels, each pixel comprising a charge-collecting electrode, a thin film transistor readout matrix connected to the charge-collecting electrodes, and a power supply for supplying a voltage between the top electrode layer and the readout matrix; the method comprising the steps of selectively varying the voltage between the top electrode and the readout matrix to provide a signal-to-noise ratio of at least 50 over a range of exposures and to select a voltage within said range that establishes an electric field in said sensor layer of at least a minimum value E_C and causes the digital imaging device to operate below a digital electronic saturation point, said selected voltage corresponding to a selected signal-to-noise behavior in which the signal-to-noise ratio is at least 50 and matches a selected object being imaged with said device in said non-destructive testing process.

16. (New) A method as in claim 15 in which said voltage is in the range of 1.5 kV and 3.0 kV.

17. (New) A method as in claim 16 in which the signal-to-noise ratio increases from below 200 to above 300 before said saturation point is reached as said voltage changes from 3.0 kV to 1.5 kV.

18. (New) A method as in claim 15 in which said selected voltage causes said minimum electrical field to corresponds to a signal-to-noise ratio in excess of 300.

19. (New) A method as in claim 15 in which said selected signal-to-noise behavior is maintained at exposures in the range of 10KeV to 10 MeV.

20. (New) A method as in claim 15 including the step of presetting a number of selected voltages for use with respective types of specimen.